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ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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July 7, 2009

Bill Brawner
Headquarters, Department of the Army
Base Realignment and Closure Division (DAIM-BD)
2530 Crystal Drive
Arlington, VA 22202

Re: June 23, 2009 Army Letter Requesting
A Reduction of Required Groundwater
Monitoring Samples at Landfills 6 and 7

0970555001/Lake
Fort Sheridan (BRAC)
Superfund/Technical

Dear Mr. Brawner:

The Illinois Environmental Protection Agency (Illinois EPA or Agency) is in receipt of the Army's June 23, 2009 letter requesting "the reduction of the number of groundwater samples being collected during monitoring events for Landfills 6 & 7 at Fort Sheridan." It was received on June 24, 2009. The submittal presents the results of an analysis of groundwater flow direction in the Landfill 6 and 7 vicinity for both the Regional Sand Aquifer (RSA) and the shallow till wells.

The Army, on April 14, 2009, submitted a request to reduce the number of up-gradient wells to be sampled based upon the statistical analysis of the constituents within the groundwater. The Agency responded on April 24, 2009 with a letter denying that request. The Army has since conducted a second, more detailed review of existing conditions to support their request to reduce the number of up-gradient wells in both the shallow till wells and the RSA wells from 3 to 1. The results of which determined that the groundwater flow direction is to the east with "little or no variation in the easterly direction of groundwater flow." Based upon this information, the Army then states that the elimination of two of the up-gradient monitoring wells from the program "would not have any effect on the integrity or purpose of the RSA monitoring system." The same is said to be true of the shallow till groundwater monitoring system.

The number of up-gradient wells needed for monitoring the groundwater around a landfill is site specific and dependent on a number of things: site geology/hydrogeology, spatial variability (lateral and vertical) and temporal variability, as well as how background was originally developed, at a minimum. Also included are on-site conditions and impacts (if any), off-site conditions and impacts (if any), current well spacing, current well construction, etc. As one can see, there are quite a number of inputs to consider. When taking all of this into account and considering the Army's request, my initial reaction is that removing two up-gradient wells might not have an adverse effect on the integrity or purpose of the monitoring systems. However, there is one more thing to consider.

In the past at other landfill sites within the State, a lack of up-gradient wells providing a full picture (both

past and present) of spatial and temporal variability, has been a problem at some sites requesting post-closure certification (due to down-gradient exceedances that cannot be properly explained). If there are Class 620 exceedances in the collected groundwater, the only way the Agency could sign off on post-closure certification is if the owner can demonstrate (per 620) that those exceedances are naturally occurring. In such cases, those background wells are invaluable. While they are not numerous, there have been exceedances in both the RSA and the till wells of the Class 620 screening levels.

After careful review of the Army's letter, the results of the statistical analysis, and the approved Groundwater and Leachate Monitoring Plan, as well as, the history of the site and the required data inputs to reach post-closure certification, the Agency has decided that continuing the groundwater monitoring program with just one up-gradient well in each horizon would not yield sufficient information to demonstrate, per 620, that all past, current, and any future exceedances are or were naturally occurring. (One data point per sampling event per horizon does not provide the statistical weight to make such a determination.) Without properly making this demonstration, the Army could never reach an end to post-closure monitoring. Therefore, although reducing the number of wells to be sampled appears more efficient and cost-effective in the short term, it could cost the Army significantly more in the long term, should the Army not be able to reach post-closure certification and be required to continue groundwater monitoring in perpetuity.

Therefore, the Agency believes the Army should continue to collect groundwater samples from all wells as specified in the approved Groundwater and Leachate Monitoring Plan.

If you have any questions regarding anything in this correspondence or would like further explanation, you may contact me at 217/557-8155 or via electronic mail at Brian.Conrath@illinois.gov.

Respectfully,

Brian A. Conrath

Brian A. Conrath
Remedial Project Manager
Federal Facilities Unit
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Bureau of Land

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